

West Valley Demonstration Project

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Low-Level Waste Management Program Plan

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ACRONYMS

ANTI-C	Anti-Contamination Clothing
AWCO	Alternate Waste Certification Official
CAPR	Cost Account Planning Report
CF	Cubic Feet
CFM	Cubic Feet per Minute
CFR	Code of Federal Regulation
CH	Contact Handled
CPC/WSA	Chemical Process Cell Waste Storage Area
CPC	Chemical Process Cell
CSPF	Container Sorting and Packaging Facility
CSRF	Container Size Reduction Facility
CSS	Cement Solidification System
D&D	Decommissioning and Decontamination
DDWO	D&D Waste Management Operations
DOE/OH	U. S. Department of Energy, Ohio Field Office
DOE	U. S. Department of Energy
DOT	U. S. Department of Transportation
FY	Fiscal Year
HIC	High Integrity Containers
HLW	High Level Waste
LLW	Low-Level Radioactive Waste
LLW2	Low-Level Waste Water Treatment Facility #2
LLWTF	Low-Level Waste Water Treatment Facility
LSA	Lag Storage Area
LSB	Lag Storage Building
MLLW	Mixed Low-Level Waste
NRC	U. S. Nuclear Regulatory Commission
NTS	Nevada Test Site
OH/WVDP	U. S. Department of Energy, West Valley Area Office
RCRA	Resource Conservation and Recovery Act
RH	Remote Handled
RTS	Radioactive Treatment System
RWCPP	Radioactive Waste Certification Program Plan
SOP	Standard Operating Procedure
STP	Site Treatment Plan
TRU	Transuranic Waste
TSDF	Treatment, Storage, and Disposal Facility
VEMP	Vitrification Expended Materials Program
WAC	Waste Acceptance Criteria
WCO	Waste Certification Official
WSD	Waste Shipping & Disposal
WMS	Waste Management Services
WPC	Waste Package Certifier
WRPA	Waste Reduction and Packaging Area
WVDP	West Valley Demonstration Project
WVNSCO	West Valley Nuclear Services Company

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LOW-LEVEL WASTE MANAGEMENT PROGRAM PLAN

1.0 INTRODUCTION

1.1 Purpose

Sites that manage radioactive waste are required by DOE O 435.1, *Radioactive Waste Management* to develop, document, implement and maintain a site-wide Radioactive Waste Management Program. This program is required to use a systematic approach for planning, executing, and evaluating the management of radioactive waste in a manner that supports the complex-wide Radioactive Waste Management Programs and ensures the requirements of DOE O 435.1, and its associated manual and guidance documents are met. Transuranic waste is addressed in WVDP-417, "TRU Waste Management Program."

The purpose of the Low-Level Waste Management Program Plan is to provide the necessary framework to safely and effectively manage the site's low-level wastes in accordance with DOE O 435.1. The program described in this manual provides for the following functions:

Identification of site goals, objectives and milestones, for safe management of low-level waste.

Systematic planning and execution of site low-level waste management activities; and

Identification of organizational responsibilities and the facilities and methods that will be used by the site in low-level waste management activities.

DOE O 435.1 requires that the site-wide Waste Management Program Plan cover High-Level Waste (HLW), Transuranic (TRU) Waste, Low-Level Waste (LLW), and Mixed LLW (MLLW) but allows sites the option of maintaining separate program documentation for each type of waste. WVDP has opted to maintain program documentation separately for each waste type. Except for key interfaces, this document covers the management of LLW only. Program documentation for HLW can be found in WVDP-200, *"West Valley Demonstration Project (WVDP) Waste Acceptance Manual"*. Program documentation for MLLW can be found in WVDP-299, *"Site Treatment Plan Fiscal Year 2003 Update January 2004."* Program documentation for TRU Waste is presently under development.

NOTE *The Low-Level Waste Management Program is a Technical Safety Requirement Administrative Controls program as identified in WVDP-0146, "West Valley Demonstration Project Technical Safety Requirements." WVDP-146 includes a program statement associated with each Technical Safety Requirement Administrative Controls program. In accordance with 10 CFR 830.201, 10CFR 830.205(a) (2) and 10 CFR 830.207(d), any proposed change (i.e., modification, addition, or deletion) to WVDP-019 that would invalidate the program statement in WVDP-146 requires prior DOE approval.*

2.0 GOALS, OBJECTIVES, AND MILESTONES

2.1 Long-Range Goals

The primary site-wide goal is to complete the West Valley Demonstration Project (WVDP) Act. Though mainly addressing the vitrification of HLW, the WVDP Act addresses the management of LLW in elements #4 and #5:

- 2.1.1 Element #4 - *"The Secretary shall, in accordance with applicable licensing requirements, dispose of Low Level Radioactive Waste (LLW) and Transuranic Waste (TRU) produced by solidification of HLW under the project."*
- 2.1.2 Element #5 - *"The Secretary shall, decontaminate and decommission - (1) the tanks and other facilities of the Center in which the HLW solidified under the project was stored, (2) the facilities used in the solidification of the waste, and (3) any material and hardware used in connection with the project, in accordance with such requirements as the Nuclear Regulatory Commission (NRC) may prescribe."*

2.2 Interim Objectives

The WVDP long-range goals will be accomplished through the completion of the following interim objectives:

- 2.2.1 Shutdown - Shutdown of the Vitrification Facility was completed on September 5, 2002.
- 2.2.2 Decontamination - Vitrification Cell dismantlement will be completed on or before December 2004.
- 2.2.3 Waste Disposal - Complete disposal of LLW produced by vitrification of the HLW under the project by the end of FY 2008.

2.3 Priorities

The WVDP Low-Level Waste Management Program will be executed in accordance with the following priorities:

- 2.3.1 Dispose of newly generated and continuously generated waste streams with an identified path to disposal within 1 year of storage to maintain compliance with DOE O 435.1 storage limit and to avoid the need for additional LLW storage buildings.
- 2.3.2 Maintain adequate storage space for wastes generated during decontamination and decommissioning with no identified path to disposal by managing the inventory of legacy LLW stored in the LSA Complex.

2.4 Allocation of Funds and Resources

- 2.4.1 Newly Generated LLW - Funds and resources for the disposition of newly generated waste will be integrated into project and process budget planning as required by Section 5.1, *"Waste Stream Life-Cycle Planning"*.
- 2.4.2 Existing Inventories of LLW - In the current period, funds and resources for the management of existing inventories of LLW will be limited to only what is necessary to maintain existing inventories in a safe storage configuration. If additional funding or resources become available during this phase of the project, consideration will be given to the disposition of legacy inventories which may have an identified path to disposal (6.2).

3.0 ORGANIZATIONAL AND FUNCTIONAL RESPONSIBILITIES

3.1 WVDP Organization

The WVDP site is owned by the State of New York. The WVDP is conducted by West Valley Nuclear Services Company (WVNSCO) for DOE under Contract No. DE-AC07-81NE44139. The DOE Ohio Field Office (DOE/OH) is the responsible DOE field organization. The WVNSCO contract is administered for DOE/OH by the DOE West Valley Area Office (OH/WVDP) with offices located at the WVDP. As the contractor, WVNSCO is responsible for developing and implementing the Low-Level Waste Management Program.

3.2 Waste Generating Organizations

Responsibility for managing the site's waste begins with the projects or processes that generate the waste.

- 3.2.1 Project (or Process) Managers - Managers of projects or processes that generate LLW are responsible for integrating Life-Cycle Waste Management into the project planning (or annual budgeting) process in accordance with Section 5.1.
- 3.2.2 Waste Generators - Personnel performing work that generates radioactive waste are responsible for handling waste in accordance with specific work instructions and SOP 300-07, "Waste Generation, Packaging, and On-Site Transportation."

3.3 Waste Shipping and Disposal (WSD)

The WSD Manager ensures the timely completion of LLW characterization, shipping and disposal to meet site-wide project and process waste management needs. The WSD Manager provides input to the annual budget plans (CAPRs) to ensure Life-Cycle Waste Management costs are factored into the annual budget. The WSD department is organized into the following main functions:

- 3.3.1 WSD Representative - As Waste Management liaisons, WSD representatives are matrixed to the various WVDP projects to provide guidance to the waste generating organizations and to ensure that an adequate level of effort is given to the up-front planning aspects of waste management. As a project team member, the WSD representative is the Project Manager's main point of contact for:
- A. Coordination - Coordinating the activities of waste characterization, certification, shipping and disposal;
 - B. Planning - Providing task definition and duration estimating for incorporating waste management activities into the project schedule;
 - C. Cost Estimating - Providing cost estimates for incorporating waste management activities into the project budget.
 - D. Guidance - Providing guidance to engineering for the technical aspects of waste management such as treatment, containerization, special handling, etc.
- 3.3.2 Waste Characterization Personnel - As the functional core of the waste characterization process, these personnel are responsible for:
- A. Analytical Data - Evaluating radio-chemical and chemical sampling data obtained by Waste Generators;
 - B. Profiling - Developing and verifying waste stream profiles and supporting documentation;
 - C. Quantification - Specifying acceptable methods for quantifying radioactive content within waste packages;
 - D. Assessment - Annually assessing waste generators to ensure that established waste stream profiles are accurate and have not changed;
 - E. Defense and Justification - Demonstrating compliance with waste characterization requirements of off-site treatment and disposal facilities;
 - F. Disposal Profiles - Completing waste profile forms provided by the disposal site;
- 3.3.3 Waste Shipping & Disposal Personnel - As WVDP off-site transportation specialists these personnel are responsible for:
- A. DOT Compliance - Classifying the waste to ensure it meets applicable Department of Transportation (49 CFR) requirements for transportation of radioactive waste;

- B. Manifests - Preparation of shipping manifests and preparation and transmittal of pre-shipping notices;
- C. Shipment Scheduling - Coordination of shipments between the transporter (pick-up and delivery) and the TSDF (receiving).

3.3.4 Waste Package Certifier (WPC) - The (WPC) or designee is responsible for:

- A. Review - Reviewing waste generator and waste characterization documentation for certification.
- B. Acceptance - Acceptance of the waste package into the Lag storage system per WVDP-370, "WVDP Radioactive Waste Acceptance Program."
- C. Traceability - The WPC is also responsible for ensuring that appropriate documentation exists to demonstrate waste traceability from the point of generation through certification into storage.

3.4 D&D Waste Management Operations (DDWO)

D&D Waste Management Operations (DDWO) personnel report to the Waste Facilities Operations Manager in the Waste Disposition Project Organization. As the custodian of WVDP LLW during storage until off-site shipment, they are responsible for:

3.4.1 Container Management - Managing waste containers in LLW storage, including:

- A. Container Inspections - Performing initial waste container inspections prior to acceptance into LLW storage and final inspections just prior to transporting off-site;
- B. Onsite Transportation - Transporting containers into storage once accepted and between storage and treatment facilities.
- C. Container Surveillance and Maintenance - Periodically inspecting the containers for defects while in storage and correcting deficiencies (corrosion, defects, leaks, etc.) noted during inspections by performing the necessary repairs, over-packing and re-packing, compliance with relevant criticality control storage configuration requirements (if applicable), and
- D. Container Labeling and Loading - Installing all required labeling for certification and transport and loading on transport to an off-site disposal facility.

- 3.4.2 LLW Facilities Operations - Providing trained operators to operate the LLW storage and treatment facilities in accordance with applicable Standard Operating Procedures (SOP'S) and special work instructions provided by WMS.
- 3.4.3 Interim Storage Area Waste - Collecting, inspecting and performing the final packaging of the wastes collected from the site's designated Interim Storage Areas in accordance with SOP 300-07, *"Waste Generation, Packaging, and On-Site Transportation"*.
- 3.4.4 Legacy LLW Processing - Processing of the site's legacy LLW, including various forms of contact waste handling such as treatment, sorting, stabilization, repackaging, compaction, etc.

4.0 LOW-LEVEL WASTE MANAGEMENT FACILITIES

4.1 Waste Storage Facilities

The WVDP maintains seven facilities in which LLW is stored. Three of these facilities, the Chemical Process Cell Waste Storage Area (CPC/WSA), Radioactive Treatment System (RTS) Drum Cell, and the Waste Tank Farm Vault do not routinely accept waste for storage. The remaining four facilities and associated hardstands form the Lag Storage Complex. The buildings of the Lag Storage Complex are actively receiving new wastes for storage and have a total maximum storage capacity of 405,463 cf. Presently, the Lag Storage Complex buildings house an inventory of 338,900 cf of waste and is at 83% of maximum capacity.

- 4.1.1 Lag Storage Building (LSB) - The LSB is a non-heated, pre-engineered metal structure anchored to a 140 ft x 60 ft concrete slab foundation. The LSB is the WVDP facility designated for the storage of contact handled TRU and Suspect-TRU waste containers. LSB is also used to store LLW. The LSB has a maximum storage capacity of 47,011 cf of waste. The LSB presently houses 28,600 cf of LLW, TRU and Suspect-TRU wastes and is at 61% of maximum capacity.
- 4.1.2 Lag Storage Area #1 (LSA-1) - LSA-1 is a non-heated, pre-engineered frame and fabric enclosure which covers an area of 191 ft x 55 ft. The floor surface consists of compacted gravel. A concrete slab was placed in 1999 in the main aisle to improve traction for fork truck traffic. LSA-1 has a maximum storage capacity of 45,454 cf. LSA-1 presently houses 39,100 cf of LLW and is at 86% of maximum capacity.
- 4.1.3 Lag Storage Area #3 (LSA-3) - LSA-3 is a heated, pre-engineered metal structure anchored to a 88 ft x 291 ft concrete slab foundation. It is heated to reduce the impact of the natural freeze-thaw cycle on waste having higher moisture content (sludge, resin, some soils, etc.), thus minimizing the deterioration of containers stored inside. LSA-3 has a maximum storage capacity of 166,018 cf. LSA-3 presently houses 135,900 cf of LLW and is at 82% of maximum capacity.

- 4.1.4 Lag Storage Area #4 (LSA-4) - LSA-4 is a heated, pre-engineered metal structure anchored to a 88 ft x 291 ft concrete slab foundation. LSA-3 is heated to reduce the impact of the natural freeze-thaw cycle on waste having higher moisture content (sludge, resin, some soils, etc.), thus minimizing the deterioration of containers stored inside. LSA-4 provides housing for the Container Sorting and Packaging Facility (CSPF) described in Section 4.2 below. LSA-4 has a maximum storage capacity of 146,980 cf. LSA-4 presently houses 135,300 cf of LLW and is at 92% of maximum capacity.
- 4.1.5 Hardstands - The WVDP maintains hardstands for storing waste containers. These areas typically are provided with a gravel or asphalt base and are generically referred to as hardstands. Table A below lists the hardstands at the site:

Table A

Location	Description
Drum Cell Area & NRC Disposal Area	Used for storage or temporary staging of uncontaminated or marginally contaminated materials.
No. FRS Yard Area	Storage of shielded vaults that contain high-integrity containers filled with spent resin and diatomaceous earth from the FRS water treatment system.
CPC-WSA Area	Storage of drums of cement from pre-operational testing of the CSS. Used as shielding for the CPC-WSA
Lag Storage Area*	Includes the LSA-2 hardstand, the Vit. Storage Area, and the Lag hardstand. Provides storage for high-activity and fissile bearing waste.

*The criticality safety of stored or staged fissile-bearing materials on any of the Lag Storage Area hardstands is ensured through storage of the waste containers in designated Criticality Control Zones (CCZs) that may be established on a hardstand.

A total of 54,300 cf of LLW is currently stored in the hardstands. Hardstands have no maximum capacity.

- 4.1.6 Radioactive Treatment System (RTS) Drum Cell - The Drum Cell is an above-ground, reinforced concrete open tumulus structure which is covered by a heated, pre-engineered steel structure. The drum cell houses 19,723 square drums (71 gal) containing the process waste stream from the Cement Solidification System

(CSS). Drums were transferred into the drum cell and stacked in place by a remotely operated conveyor and bridge crane system. The drum cell contains 8,057 Class A drums and 11,666 Class C drums for a total of 186,000 ft³. The drum cell is no longer receiving waste containers for storage.

4.1.7 Chemical Process Cell Waste Storage Area (CPC/WSA) - The CPC/WSA is a non-heated steel arched structure which covers an area of 200 ft by 70 ft. The floor of the area is a gravel pad. The area currently contains thirty-five waste storage boxes and forty-five concrete shield modules. Twenty-two of the waste storage boxes were generated from the CPC decontamination project. The twenty-two waste storage boxes are surrounded by forty-five hexagonal-shaped concrete shield modules arranged in an oblong circle. The shield modules measure 7 ft across the flats 10 ½ ft high. Each shield module contains twenty-one 55-gallon drums. These drums were filled with either contaminated debris, or clean soil, sand, and/or gravel to enhance the shielding capabilities of the overpacks. The remaining thirteen waste storage boxes are stored outside the ring of shield module overpacks, nine boxes on the west end and four boxes on the east end. The CPC/WSA presently houses 27,800 cf of LLW, TRU and Suspect TRU wastes and is no longer receiving waste containers for storage.

4.1.8 Waste Tank Farm Vault - The Waste Tank Farm Vault is a precast concrete structure used to store waste boxes containing high dose components such as pumps from the high level waste tanks.

4.2 Waste Processing Facilities

The facilities in this group are used to conduct various forms of contact waste handling such as treatment, sorting, stabilization, repackaging, dewatering, compaction, etc. These operations are mainly associated with the processing of legacy LLW.

4.2.1 Container Sorting and Packaging Facility (CSPF) - CSPF is a 40 ft by 28 ft stand-alone facility located within the LSA-4 waste storage facility. It is constructed of prefabricated, modular stainless steel panels with plexiglass windows for viewing and external lighting purposes. The CSPF consists of a sorting room, drum/box load-in room, drum load-out room, and two air locks. Waste packages entering the CSPF are moved into the drum/box load-in room prior to entering the sorting area. Packages are subsequently moved into the sorting area, placed on a lift-and-tilt-table, and opened. Drums or boxes are moved from the sorting room to the load-out room and placed back into storage in the Lag Storage Complex. Other equipment in the sorting room consists of a sorting table with liquid catch basin, drum roller, breathing air system, and an overhead bridge crane. The CSPF ventilation system consists of a double stack 2000 cfm system with two nominal 1000 cfm blowers. Fire detection and suppression systems have been installed in the CSPF. The CSPF is operated by a crew of six. Sorting operations can proceed at a nominal rate of 1 standard waste box or 6 drums per entry (2 entries per day). This equates to a weekly production rate of 720 cf for 240 mhrs of effort.

- 4.2.2 Contact Size Reduction Facility (CSRF) - The CSRF was originally designed for the volume reduction and decontamination of large, contact-handled equipment from WVDP decontamination activities. Currently, the CSRF is used for processing waste that is too large to handle in the CSPF. In an effort to minimize contamination of the newer CSPF, the CSRF is also used for handling waste containing higher levels of contamination. Packages to be processed in the CSRF are staged in the north airlock and then transferred to the cutting room. Following processing, containers are transferred back to the airlock for final survey prior to returning to the Lag Storage Complex. Ventilation for the CSRF is provided by a roof mounted ventilation system which operates at a nominal rate of 6,000 cfm and is backed up by the Head End Ventilation system of the Main Plant. The CSRF is operated by a crew of six. Sorting operations can proceed at a nominal rate of 1 standard waste box or 6 drums per day. This rate is roughly half that of the CSPF due to additional precautions and difficulties associated with the waste sent to this facility. This equates to a weekly production rate of 360 cf for 240 mhrs of effort.
- 4.2.3 Waste Reduction and Packaging Area (WRPA) - A small compactor located on the Waste Reduction and Packaging Area (WRPA) dock is used for compacting low activity LLW. This waste, consisting primarily of anti-C's and paper products, is collected in polyethylene bag-lined 208 L (55 gal) drums throughout the site. Full drums and boxes are transported to the WRPA dock where the bagged waste is transferred from the drums to standard waste boxes and compacted by a 50 ton box compactor. The compactor is vented by a HEPA-filtered ventilation system to provide contamination control. WRPA operated by a crew of four. A volume reduction of 3:1 is normally achieved. Operations can proceed at a nominal rate of 270 cf of un-compacted waste (90 cf compacted) per day. This equates to a weekly production rate of 1,080 cf (non-compacted) for 160 mhrs of effort.
- 4.2.4 Low Level Waste Water Treatment Facility (LLW2) - The LLW2 employs ion exchange columns to remove various activation and fission product radionuclides from site low-level liquid waste water streams. Spent resin is sluiced from the columns into 119 cf containers outfitted with dewatering equipment. The LLW2 packaging room houses the equipment for sluicing and dewatering operations. The LLW2 packaging room has a HEPA filtered ventilation system for airborne contamination control. Resin dewatering can be accomplished at a nominal rate of 1 box (120 cf) every 3 days with about 70 mhrs of operator effort. This equates to a weekly production rate of 200 cf and 116 mhrs of effort.

5.0 LOW-LEVEL WASTE MANAGEMENT OPERATIONS AND ACTIVITIES

This section describes the operations and activities required to properly manage the WVDP's LLW. To ensure that Waste Management is conducted in an efficient and cost effective manner, and to achieve the fundamental principles of pollution prevention, waste minimization and touch-waste-once, an emphasis has been placed on planning.

5.1 Waste Stream Life-Cycle Planning

It is the responsibility of the Manager of any project (or process) that generates LLW to ensure that adequate life-cycle planning is carried out in the early stages of the project (or annual budget CAPR planning). WSD is responsible for providing personnel as requested to assist in the waste stream life-cycle planning process. The main aspects of planning are as follows:

- 5.1.1 Low-Level Waste (LLW) Projections - Annual projections of waste volumes in accordance with WM-330, *"Annual Radioactive Waste Generation Projections"*.
- 5.1.2 Project Documentation - Integration of the applicable aspects of waste stream life-cycle planning listed in WV-227, *"Planning for Waste Treatment, Storage and Disposal"* such as waste stream characterization, sampling, anticipated volume, segregation of waste types, waste minimization & pollution prevention techniques, handling, packaging, certification, storage, transportation, and disposal into project documentation.
- 5.1.3 Scheduling - Integration of life-cycle waste management activities, from waste stream generation to final long-term disposition into the project schedule. For waste streams with an identified path to disposal (see Section 6.2), the schedule should include waste management activities to support off-site disposal. For waste streams with no identified path to disposal (see Section 6.1) the schedule should include activities leading up to long-term interim storage.
- 5.1.4 Budgeting - Integration of all capital costs associated with life-cycle waste management such as off-site sample analysis, treatment, containerization, etc., into the project budget (or CAPR). For waste streams with an identified path to disposal (see Section 6.2), the budget (or CAPR) should include costs for shipping and disposal.

5.2 Waste Stream Characterization

Waste stream characterization is conducted in accordance with Waste Management procedure WM-210, *"Waste Stream Characterization"* to allow representation of the physical, chemical, and radiological properties of the waste to permit proper segregation, treatment, storage, and disposal. WM-210 provides instructions for the development of waste profiles for RCRA and radioactive waste stream characterizations of wastes generated at the WVDP. WM-210 establishes the basis to ensure that all waste streams presented for on-site storage and off-site disposal have been properly characterized. In addition, WM-250, *"Waste Container Characterization"* provides for the characterization of each waste package. Except in the case of legacy LLW, waste stream characterization is normally performed prior to waste generation and packaging.

5.3 Waste Packaging

As waste is generated, it is packaged in accordance with the general requirements of SOP 300-07, *"Waste Generation, Packaging and On-Site Transportation"* and the specific work instructions prepared by the cognizant engineer. Except in cases where a cost savings or reduction of risk to the worker can be demonstrated, waste is normally placed in

its final container in a disposal-ready condition. Once waste is packaged and the required documentation is completed by the generator, the container is weighed and a detailed radiological survey is performed, documented and submitted to WSD for container characterization and acceptance.

5.4 Waste Acceptance

Waste containers may be temporarily staged while WSD characterizes and classifies the newly generated waste package in accordance with WM-230, *"Determining Radioactivity in a Waste Package"*. Waste container documentation and calculations are reviewed by the Waste Package Certifier in accordance with WM-310, *"Conducting Waste Certification Activities"* to determine if the waste package meets the requirements of the local WVDP Waste Acceptance Criteria.

5.5 Waste Storage

Once a waste package has been accepted, it may be transported to the Lag Storage Complex for temporary storage while arrangements are made for long-term disposition. For waste with an identified path to disposal, arrangements must be made for disposal within 1 year (not including the pre-acceptance staging period). For waste with no identified path to disposal, waste may remain in storage until a path to disposal is identified. Lag Storage Complex operations are conducted by DDWO in accordance with SOP 009-21, *"Lag Storage Operations."*

5.6 Waste Certification

Waste that is to be disposed of at the Nevada Test Site (NTS) must undergo a final certification by the Waste Certification Official, (WCO) or the Alternate Waste Certification Official (AWCO) prior to shipment to NTS for disposal in accordance with WM-310, *"Conducting Waste Certification Activities"*.

5.7 Waste Shipping & Disposal

WVDP has developed the capability of shipping waste by rail and by truck to Envirocare, and by truck to NTS. Shipping and disposal costs are usually the largest portion of waste management cost. The mode of transportation, the target disposal facility and the type of waste greatly influence the final shipping and disposal costs. It is also not unusual for costs to change significantly during the life of a project. WDS Representatives assist project and process planners and determine the most cost effective mode of transportation and target disposal facility. Waste shipping is conducted in accordance with the requirements of SOP 300-26, *"Off-Site Transportation of Waste and Hazardous Materials,"* and WM-340, *"Off-Site Shipment Preparation."*

6.0 LOW-LEVEL WASTE INVENTORY AND FUTURE WASTE PROJECTIONS

The WVDP has an inventory of 571,600 cf of LLW in storage. Due to recent reductions in project funding and the decision to focus resources on facility decontamination activities, most of the present inventory of LLW will remain in storage for the near term. The majority of LLW in storage requires significant effort to put the waste in a disposal-ready form and to establish a profile with an off-site disposal site. WDS shipped approximately 34,000 cf of LLW in CY2003 with plans to ship 100,000 cf in CY2004.

6.1 Obstacles to Disposal

- 6.1.1 Characterization - The majority of LLW having no identified path to disposal requires sampling and analysis to determine the radiological characteristics of the waste. Once analytical results are known, a waste profile may be established with a disposal facility.
- 6.1.2 Sorting - Most containers of non-homogeneous legacy LLW will require sorting to ensure that it meets the Waste Acceptance Criteria (WAC) of the target disposal facility.
- 6.1.3 Stabilization - Most homogeneous legacy LLW such as sludge and other high moisture content wastes will require stabilization to ensure free liquid content is acceptable to the disposal facility Waste Acceptance Criteria.
- 6.1.4 Greater Than Class A - Waste that has been classified as greater than Class A is prevented from being shipped to disposal due to a legal issue related to an interpretation of the Stipulation of Compromise Settlement (*Coalition in West Valley Nuclear Wastes and Radioactive Waste Campaign -v- Department of Energy, United States of America, Civil No. 86-1052-C*).

6.2 LLW With an Identified Path to Disposal

WVDP has accumulated an inventory of waste with an identified path to disposal. As the project focuses on facility decontamination, these wastes will be maintained in a safe storage configuration. If additional funding or resources become available, consideration will be given to the disposition of existing inventories which have an identified path to disposal.

6.3 FY 2003 Waste Generation

During FY 2003, a total of 28,125 cf of LLW radioactive waste was generated at the WVDP.

6.4 Future Waste Projections

Future volumes of LLW generated at the WVDP are projected in accordance with WM-330, "Annual Radioactive Waste Generation Projections". WM-330 requires the projects and processes that will generate the waste during the following year to submit projections to the WSD Manager. Total projected volumes for the overall WVDP cannot be accurately calculated because the final site closure criteria has not yet been determined. Until closure criteria is determined, WVDP will conduct annual planning in accordance with the methodology contained in WM-330.

WVNSCO RECORD OF REVISION

Rev. No.	Description of Changes	Revision On Page(s)	Dated
0	Original Issue	All	07/83
1	Update	All	07/83
2	Update	All	09/83
2	(Supplement)	---	05/84
3	Restructure entire Document to format suggested in Attachment 1 of DOE Order 5820.2	All	12/84
4	Information Update	All	10/85
5	Information Update	All	10/86
6	Information Update	All	10/87
7	Information Update-Complete Revision	All	10/88
8	Information Update-Complete Revision and title change from "WVDP Long-Term Radioactive Waste Management Plan" to "Annual Waste Management Plan".	All	12/89
9	Information Update-Complete Revision	All	02/91
10	Information Update-General Revision	All	12/91
11	Information Update-General Revision	All	12/92
12	Information Update-General Revision	All	12/93
13	Information Update-General Revision	All	12/94
14	Information Update-General Revision	All	12/95
15	General Revision	All	02/97
16	Annual Update	All	6/18/98
17	Annual Update	All	10/29/99

WVNSCO RECORD OF REVISION CONTINUATION FORM

Rev. No.	Description of Changes	Page(s)	Revision On Dated
18	Information Update-General Revision This revision reflects changes in DOE Order on Radioactive Waste Management, site waste management strategy, and site accomplishments and milestones.	All	04/14/00
19	General Revision to reflect annual update showing FY2000 accomplishments, current state of waste management, and projections for FY2001. No departments are affected by this change.	All	10/03/01
20	A total restructuring of the document to conform to DOE O 435.1 content and format requirements. Departments Affected: Site Operations, High Level Waste Projects, Process Plant Decontamination Project, Project Management Control, Waste Management Services and Waste Certification Office	All	01/17/02
FC1	1.3 Added NOTE to Scope Section. 5.3 Updated SOP 300-07 title. This field change was needed to ensure consistency with WV-914, Revision 22. No personnel are affected by this field change.	5 16	02/11/02
21	Revision Title Page - name change for Cognizant Author and Cognizant Manager. Table of Contents - changes made due to sections deleted. 2.2.1 - sentence reworded. 2.3 - deleted - steps renumbered. 2.3.1 - added (15,000 cf). 2.4.2 - changes "three" to "two". 3.2.2 - added title to SOP 300-26. 3.3.4 - Waste Package Certifier responsibilities clarified. 3.4 - change "WMO" to "DDWO". 3.5 - section deleted - section moved to 3.3.4. 4.1 - correct typing error and changed inventory to 345,100. 4.1.1 - changed LSB volume to 27,100 cf and percentage to 58%. 4.1.2 - changed LSA-1 volume to 43.500 cf and percentage to 96%.	2 6 6 6 7 7 9 9 10 10 10 10	06/26/03

WVNSCO RECORD OF REVISION CONTINUATION FORM

			Revision On		
Rev. No.	Description of Changes	Page(s)	Dated		
21 (Con't.)	4.1.3 - changed LSA-3 volume to 140.800 cf and percentage to 85%.	10	03/22/04		
	4.1.4 - changed LSA-4 volume to 133,700 and percentage to 91%.	11			
	4.1.5 - reworded first sentence and changed "flammable" to "combustible," and changed LLW volume to 55,300.	11			
	4.1.6 - added "for a total of 186.00 ft³.	11			
	5.4 - deleted "up to 90 days," and changed "paste" to "waste".	14			
	5.5 - change "WMO" to "DDWO".	15			
	5.7 - added sentence to clarify how waste shipping is conducted.	15			
	6.0 - changed inventory numbers and added "of post 09/11/01 waste with disposal path".	15			
	6.1.4 - paragraph reworded.	16			
	6.2 - deleted "42,078 cf of".	16			
	6.2.1 - 6.27 - sections deleted.				
	6.3 - change "2001" to "2002," and deleted second sentence.	16			
	Changes close IR-0797-01 - changes made to clarify the responsibilities of the WPC, update inventory numbers and administrative changes with department title changes.				
	This procedure was also updated to reflect the requirements of DCIP-100.				
	This change affects WCO, AWCO, WPC and WMS.				
	22	1.0 Added "Transuranic waste is addressed" ...		5	
		Replaced "NOTE" to reflect WVDP-146 requirements.		5	
		2.2.2 Replaced with "Vitrification cell"...		6	
		4.1.5 Replaced with "the WVDP maintains..."		11	
4.1.5 Added Table A		11			
6.1.4 Deleted last paragraph, "Transuranic (TRU) waste is "....		16			
Updated inventory quantities, administrative changes with department title changes.		All			
This change affects WCO, AWCO, WPC and WMS.					